CLAIMS:

1. A system (10), comprising:

N weighting-filter devices (where $N \geq 2$) (20), each receiving an input signal and a M-value feedback signal (where $M \geq 2$) and each generating M filtered output signals;

a path sorter (30) for applying at least one cost function to the N*M filtered output signals to produce the N cheapest paths;

a normalizer (40) for normalizing the N cheapest paths; and

an output device (50) for selecting an output signal and for supplying the N M-value feedback signals to the N weighting-filters (20).

2. The system (10) of claim 1, wherein the at least one cost function is a function of at least one output signal characteristic.

3. The system (10) of claim 1, wherein each of the N weighting-filter devices (20) includes a M-value generator and a filter.

4. The system (10) of claim 3, wherein each weighting-filter device (20) includes a subtractor for subtracting the input signal and the M-value feedback signal and filtering the M output signals.

5. The system (10) of claim 1, wherein the M-value feedback signal includes two values, -1 and 1.

6. The system (10) of claim 1, wherein N is fixed or adaptive.

7. The system (10) of claim 4, wherein each of the weighting-filter devices (20) includes a fixed order, fixed frequency response filter; a fixed order, variable frequency response filter; a variable order, fixed frequency response filter; a variable order, variable frequency response filter; or a noise-shaping filter adjustable for Direct Stream Transfer (DST) performance.

8. The system (10) of claim 1, wherein the system (10) is implemented in software and/or hardware.

9. The system (10) of claim 1, wherein the system (10) is used for analog-digital, digital-analog, and/or digital-digital (AD/DA/DD) conversion and/or pulse width modulation (PWM).

10. A method, comprising:

receiving an input signal and at least two M-value feedback signals (where $M \geq 2$) and generating M*N filtered output signals;

applying at least one cost function to the M*N filtered output signals to produce the N cheapest paths;

normalizing the N cheapest paths; and

selecting an output signal from the N cheapest paths and for generating the at least two M-value feedback signals.